

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A heat treatment method comprising the steps of:
holding a treatment object in a processing chamber;
heating the treatment object by irradiating it with light from a lamp light source during a first period, while supply of a coolant is kept in the processing chamber; and
cooling the treatment object during a second period, while supply of the coolant is kept in the processing chamber,
wherein said lamp light source is turned on and a radiation from said lamp light source is held for 0.1 to 20 seconds in the first period,
wherein a temperature rise rate by irradiating the treatment object with light from the lamp light source is 100 to 200° C per second in the first period, and
wherein a temperature drop rate by the supply of the coolant is 50 to 150° C per second in the second period [[, and]]
~~wherein one cycle including the first period and the second period is repeated several times.~~

2. (Withdrawn) A heat treatment method comprising the step of:
heating a treatment object by irradiating it through radiation from a lamp light source,
wherein the radiation from said lamp light source is pulsatively repeated several times such that the treatment object holds the temperature to its highest for 0.5 to 5 seconds.

3. (Currently Amended) A heat treatment method comprising the steps of:

holding a treatment object in a processing chamber;

heating the treatment object by irradiating it with light from a lamp light source during a first period, while supply of a coolant is kept in the processing chamber; and

cooling the treatment object during a second period, while supply of the coolant is kept in the processing chamber,

wherein a radiation from said lamp light source is held for 0.1 to 20 seconds at a time in the first period,

wherein the radiation from said lamp light source is repeated several times in the first period,

wherein a temperature rise rate by irradiating the treatment object with light from the lamp light source is 100 to 200° C per second in the first period, and

wherein a temperature drop rate by the supply of the coolant is 50 to 150° C per second in the second period [[, and]]

~~wherein one cycle including the first period and the second period is repeated several times.~~

4. (Withdrawn) A heat treatment method comprising the steps of:

holding a treatment object in a processing chamber filled with a coolant; and

heating the treatment object by irradiating it through radiation from a lamp light source,

wherein the radiation from said lamp light source is repeated several times such that the treatment object holds the temperature to its highest for 0.5 to 5 seconds.

5. (Currently Amended) A heat treatment method comprising the steps of:

holding a treatment object in a processing chamber;

heating the treatment object by irradiating it with light from a lamp light source during a first period, while supply of a coolant is kept in the processing chamber; and

cooling the treatment object during a second period, while supply of the coolant is kept in the processing chamber,

wherein said lamp light source is turned on and a radiation from said lamp light source is held for 0.1 to 20 seconds in the first period,

wherein a temperature rise rate by irradiating the treatment object with light from the lamp light source is 100 to 200° C per second in the first period, and

wherein said lamp light source is turned off while a treatment of increasing the amount of supply of the coolant so that a temperature drop rate is 50 to 150° C per second in the second period [[, and]]

~~wherein one cycle including the first period and the second period is repeated several times.~~

6. (Withdrawn) A heat treatment method comprising the steps of:

holding a treatment object in a processing chamber filled with a coolant; and

heating the treatment object by irradiating it through radiation from a lamp light source,

wherein said lamp light source is turned on while an amount of supply of the coolant is reduced,

wherein said lamp light source is turned off while a treatment of increasing the amount of supply of the coolant as one cycle is repeated several times, after the treatment object holds the temperature to its highest for 0.5 to 5 seconds.

7. (Original) A heat treatment method according to claim 1, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

8. (Withdrawn) A heat treatment method according to claim 2, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

9. (Original) A heat treatment method according to claim 3, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

10. (Withdrawn) A heat treatment method according to claim 4, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

11. (Original) A heat treatment method according to claim 5, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

12. (Withdrawn) A heat treatment method according to claim 6, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

13. (Withdrawn) A heat treatment method comprising the step of:
heating a treatment object having a semiconductor film by irradiating it through radiation from a lamp light source,

wherein the radiation from said lamp light source lasts 0.1 to 20 seconds at a time,

wherein the radiation from said lamp light source is repeated several times.

14. (Withdrawn) A heat treatment method comprising the steps of:

holding a treatment object having a semiconductor film in a processing chamber filled with a coolant; and

heating the treatment object by irradiating it through radiation from a lamp light source,

wherein the radiation from said lamp light source is held for 0.1 to 20 seconds at a time,

wherein the radiation from said lamp light source is repeated several times.

15. (Withdrawn) A heat treatment method comprising the steps of:

holding a treatment object having a semiconductor film in a processing chamber filled with a coolant; and

heating the treatment object by irradiating it through radiation from a lamp light source,

wherein said lamp light source is turned on and the radiation from said lamp light source is held for 0.1 to 20 seconds at a time, while an amount of supply of the coolant is reduced,

wherein said lamp light source is turned off while a treatment of increasing the amount of supply of the coolant as one cycle is repeated several times.

16. (Withdrawn) A heat treatment method according to claim 13, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

17. (Withdrawn) A heat treatment method according to claim 14, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

18. (Withdrawn) A heat treatment method according to claim 15, wherein said lamp light source is selected from the group consisting of a halogen lamp, a metal halide lamp, a xenon lamp, a high pressure mercury lamp, a high pressure sodium lamp and an excimer lamp.

19. (Previously Presented) A heat treatment method according to claim 1, wherein the coolant is an inactive gas comprising at least one of nitrogen and helium.

20. (Previously Presented) A heat treatment method according to claim 3, wherein the coolant is an inactive gas comprising at least one of nitrogen and helium.

21. (Previously Presented) A heat treatment method according to claim 5, wherein the coolant is an inactive gas comprising at least one of nitrogen and helium.